3.7384
pmp
v. 1992

November 1992

Progress

Montana Pole Superfund site

By the Montana Department of Health and Environmental Sciences
and the U.S. Environmental Protection Agency

PLEASE RETURN

INTRODUCTION

The Montana Department of Health and Environmental Sciences (MDHES) and the U.S. Environmental Protection Agency (EPA) are analyzing alternatives for the cleanup/remedy of the Montana Pole Superfund site in Butte. Alternatives are being developed for contaminated oils and sludges, site soils and stream sediments, and groundwater. The public is encouraged to learn more about the alternatives being considered and become involved in the decision-making process (see "Learn more about the site" section beginning on this page).

During the past year, with MDHES and EPA oversight, Atlantic Richfield Company (ARCO) has been investigating the Montana Pole site and compiling information about the type, amount and extent of contamination. ARCO put this information into a draft report, called the Remedial Investigation (RI), which was submitted to MDHES for review in July. After MDHES review and comment on this draft, the final RI Report should be ready for public review and comment in December.

The Montana Pole remedial investigation has identified the following site pollution problems to be addressed by a site remedy:

Soils and Sediments:

Contaminated soils include in-place site soils and bagged soils which were excavated during the 1986 EPA Emergency Removal Action and stored in the metal pole barns at the site. In-place contaminated soils total approximately 250,000 cubic yards (a typical pickup truck can carry one cubic yard). This volume includes soils contaminated by metals (mining related) and wood-treating products. Contaminated bagged soils stored at the site amount to approximately 10,000 cubic yards in approximately 4,000 bags. Silver Bow Creek sediments amount to approximately 5,000 cubic yards.

Groundwater:

The volume of contaminated groundwater at the site is estimated at 124 million gallons. In addition to this, contaminated water could be produced from various types of soil treatment during site remedy activities. The contaminants most commonly polluting groundwater at the site are pentachlorophenol (PCP) and polycyclic aromatic hydrocarbons (PAHs).

Oils and sludges:

Oils and sludges, the result of oil recovered from the groundwater and miscellaneous sludges and liquids, total an estimated 26,570 gallons.

STATE DOCUMENTS COLLECTION
DEC 10 1992
MONTANA STATE LIBRARY
1515 E. 6th AVE.
HELENA, MONTANA 59620

LEARN MORE ABOUT THE SITE

Public involvement is an integral part of the Superfund process. MDHES strongly encourages the public to get involved in issues concerning the Montana Pole site. Following are some options open to the community:

1. Read all about it:

MDHES maintains repositories of site documents for public review at the following locations: Butte Public Library, Montana Tech Library in Butte, the State Library in Helena, the MDHES office in Helena, the EPA office in the basement of the Butte/Silver Bow Courthouse, the Montana State University Library in Bozeman, and the University of Montana Library in Missoula.

2. Give MDHES a call:

MDHES operates a toll-free Superfund hotline at their office in Helena. If you have questions, concerns or comments about activities at the Montana Pole site or any other Superfund site in Montana, use the toll-free number. It is 1-800-648-8465 and is in operation 8 a.m. to 5 p.m. Monday through Friday, except holidays. An answering machine picks up calls during evenings, weekends and holidays.

3. Get to know the MDHES and EPA staff:

MDHES and EPA have technical and community involvement staff available to discuss site topics with the

(Cont. on page 2)

PRINTED ON RECYCLED PAPER ♻

LEARN MORE, cont. from page 1

public, either one-on-one or as a group presentation. You can reach project officer Brian Antonioli or public information officer Jane Stiles at MDHES at 1-800-648-8465 or remedial project manager Sara Weinstock or community involvement specialist Pam Hillery at EPA in Helena at 449-5414. If you wish to write to MDHES, the address is Superfund Program, Cogswell Building, Helena, MT 59620.

HOW IS A REMEDY CHOSEN?

ARCO has presented a broad list of possible remedy/cleanup alternatives for the Montana Pole site. This list was refined and reduced to include only those methods which might be feasible based on site-specific contaminant characteristics and site conditions. The "Alternative Screening Document" published by ARCO in 1991 includes the list of alternatives which MDHES and EPA are currently considering. MDHES distributed the screening document for public review last fall. (Please refer to "Learn more about the site" section for a list of document repositories where this and other Montana Pole documents can be obtained.)

The next step, which is presently underway, is to further refine the list of alternatives and perform a detailed analysis of the most promising ones. ARCO will use the results of their treatability studies, the Risk Assessment which MDHES is conducting, and applicable and relevant state and federal laws during this "detailed analysis of alternatives."

Nine criteria must be considered when evaluating each cleanup alternative, as follows:

1. Overall protection of public health and the environment
2. Compliance with state and locals laws and regulations
3. Cost
4. Reduction of toxicity, mobility, and volume
5. Long-term effectiveness
6. Short-term effectiveness
7. Implementability
8. Community acceptance
9. Support agency acceptance (EPA is the support agency to MDHES for Montana Pole)

MDHES will evaluate each alternative individually using the nine criteria. Then MDHES will compare the alternatives to identify the advantages and disadvantages of each.

This information will be compiled and presented in the feasibility study report which was submitted by ARCO in September and should be finalized in January 1993. At that time, MDHES will also issue the proposed plan in which the agency will identify the alternative, or combination of alternatives, it prefers. MDHES will hold a public meeting and hearing about the feasibility study and proposed plan, and the public will have a minimum of 30 days to comment on the alternatives and the documents.

POSSIBLE ALTERNATIVES FOR THE SITE

The current list of possible remedy alternatives for the site is based on the remedial investigation. Should members of the public have ideas about alternatives not previously considered, they should contact MDHES. MDHES encourages the public to discuss with the agency any ideas or comments they may have.

The options currently under review may be considered along with "institutional controls." Institutional controls are measures taken to prevent the public from coming in contact with contaminants left at the site. Institutional controls may include deed restrictions, building restrictions, water use control, zoning ordinances and so on. However, Superfund law requires remedies which permanently and significantly reduce the volume, toxicity or mobility of site contamination be selected over those which don't. The alternatives included in this progress report were assessed based on effectiveness, implementability and cost. The other nine criteria will be addressed later.

Following is a brief summary of each of the alternatives currently under consideration. For more detailed information and an analysis of each in terms of implementability, effectiveness and cost, please refer to the Alternatives Screening Document available at the locations listed on page one of this progress report.

Alternatives for soils left in the ground:

1. No action - Under Superfund law, the no further action alternative must be considered as a baseline. No further activities or monitoring would take place under this alternative.

2. Surface capping - Contaminant source areas would be graded to control drainage, then a soil, clay or concrete cap (impermeable cover) would be constructed over the area.

Montana State Library
3 0864 1005 0908 5

Capping prevents exposure to contaminated soils.

3. In-situ (in-place) bioreclamation - This method pumps out the contaminated groundwater, treats it and then returns it to the ground to promote biological breakdown of pollutants in the soil and groundwater.

4. In-situ (in-place) soil flushing - This method mechanically washes impacted soils in-place with steam, water or solvent. The contaminated wash solution is recovered and treated. Recovered oils and sludges would be treated along with other site oils and sludges. Recovered wash solution would be treated, and recycled or discharged.

Alternatives for excavated soils (including bagged soils and stream sediments):

1. No action - Under Superfund law, the no further action alternative must be considered as a baseline. Generally, no further activities or monitoring would take place under this alternative.

2. Excavation with treatment using chemical degradation - This soil treatment system breaks down the chlorine compounds in the contaminants. The soil is then centrifuged and rinsed to take out the chlorine contamination. The treated soil is returned to the ground or treated by another method for any remaining contaminants.

3. Treatment using solvent extraction - Soil is fed into a reactor where a solvent (such as liquified propane) is added to the soil to extract carbon-based (organic) contaminants. Clean soil is removed from the reactor and the solvent and contaminants go through a separator, where the solvent is recycled. The extracted contaminants, in the form of oils and sludges, are treated along with other site oils and sludges. Soils are returned to the excavated area or treated further through another technology.

4. Excavation and treatment using soil washing - This technology is similar to alternative #3 above except that soils are placed in a unit designed to wash them with water. Oils and sludges from the process are treated along with other site oils and sludges. Water is reused or treated and discharged. Treated soils are returned to the excavated area or treated further through another technology.

5. Excavation and treatment in a biological slurry reactor - Contaminated soil is excavated and put into a slurry reactor (similar to a large tank) where water, nutrients and air are added to encourage biological breakdown of contamination. The soil is later dewatered and returned to the excavated area or treated further through another technology.

6. Excavation and biological treatment in an engineered land treatment unit - Contaminated soils are excavated and placed in a lined treatment unit where various techniques are used to enhance biological activity and breakdown of contaminants. Treated soils can be returned to the excavated area, left in the land unit or treated further through another technology.

7. Solidification/stabilization - Soils would be excavated and treated (mixed with cement, for example) to limit the ability of contaminants to migrate from the material. Treated soils could be returned to the excavated area.

8. Excavation and incineration - Soil would be excavated, then super-heated in an incinerator located either on- or off-site. The incinerator's heat breaks down the organic contaminants including dioxin. Depending upon the location of the incinerator, resulting ash or clean material would be backfilled into the excavated area.

9. Excavation and landfill - Contaminated soils are excavated and placed in a landfill. The landfill would have a synthetic and clay liner, leachate collection and a low-permeability cap. Any liquid leaching through would be collected and treated along with site groundwater. The landfill would be fenced and site access restricted. Excavated areas are refilled with clean soil and graded. A landfill could be located either on- or off-site.

Alternatives for groundwater:

1. No action - Under Superfund law, the no further action alternative must be considered as a baseline. Generally, no further activities or monitoring would take place under this alternative.

2. In-situ (in-place) bioremediation - This technology uses methods to enhance biological action and breakdown of contaminants in the aquifer. Groundwater is recovered by the use of wells or trenches and treated in an oil/water separator. The water is treated, nutrients added and reinjected back into the ground. Recovered oil would be treated along with other site oils and sludges. This alternative would also treat contaminated soils in the path of reinjected water.

3. Extraction and treatment in a bioreactor - Groundwater is extracted and pretreated to remove metals, if necessary, and separate oil. The water then passes through a filter and into a bioreactor (tank) where organic contaminants are broken down by biological action. The resulting clean water would be returned to the aquifer or discharged to Silver Bow Creek. Recovered oils would be treated along with other site oils and sludges.

4. Extraction and treatment using carbon adsorption - Groundwater is extracted, treated to remove metals if necessary, passed through an oil/water separator and filtered. It is then sent through a series of carbon filters where organic contaminants are trapped. The resulting water would be returned to the aquifer or discharged to Silver Bow Creek. Recovered oil is treated with other site oils and sludges.

5. Extraction and treatment using chemical oxidation with photolysis - Groundwater is pumped through an oil/water separator and a filter, then piped to a reactor tank where it is

(Cont. on page 4)

WORKABLE ALTERNATIVES, cont. from page 3

treated with ozone or peroxide and ultraviolet (UV) light to break down the organic contaminants. The resulting clean water would be returned to the aquifer or discharged to Silver Bow Creek. Recovered oil would be treated along with other site oils and sludges.

Alternatives for oils and sludges:

1. No action - Under Superfund law, the no further action alternative must be considered as a baseline. No further activities or monitoring would take place under this alternative.

2. Treatment using chemical degradation - This system breaks down the chlorine compounds in the contaminants. The oil/sludge is then centrifuged and rinsed to take out the chlorine contamination. The extraction solution is disposed. Treated solids are dewatered and could be backfilled into excavated areas at the site and/or disposed off-site. The treated oil is reused or recycled.

3. Recycling or reuse - Raw or treated product would be sent away for recycling, potentially for woodtreating.

4. Incineration - Oil and sludge would be super-heated in an on- or off-site incinerator. The incinerator's heat breaks down the contaminants. The resulting ash could be used as backfill for the excavated area or disposed on- or off-site.

If you have questions about construction activities at the Montana Pole site

The U.S. Environmental Protection Agency is conducting an emergency removal at the Montana Pole site. This activity is separate from the investigative work MDHES is conducting. If you have concerns or questions about construction-type activities at the site, contact: Site Project Manager Sara Weinstock or Community Relations Specialist Pam Hillery in Helena at 449-5414

ARE YOU ON OUR MAILING LIST?

If you did not receive this publication in the mail and wish to be placed on the mailing list for future publications about the Montana Pole Superfund site, please fill out, detach, and mail this form to: Jane Stiles, Montana Department of Health and Environmental Sciences, Cogswell Building, Helena, MT 59620.

Name____

Address____

City, State________________________ Zip Code________________

TOLL-FREE SUPERFUND HOTLINE

If you have questions, comments or concerns about a Superfund site in Montana, or about Superfund in general, please call our toll-free hotline. The hotline is in operation from 8 a.m. to 5 p.m. weekdays, except holidays. (Or try out the answering machine on evenings and weekends and MDHES will call you back.)

In-state use only!

1-800-648-8465

750 copies of this public document were published at an estimated cost of .247 per copy, for a total cost of 184.99 which includes 83.59 for printing and $101.40 for distribution